results seen in the above three cases leads me to believe that the Stewart operation is indicated in most all hip flexions due to contracted soft tissues. An exception to this may only be such cases where the operator deliberately desires to destroy nerves supplying the muscle substance, as in marked spasticity where the Soutter may be preferable or where there is, in addition to flexion, a very resistant abduction of the hip, for which a Campbell procedure may find indication. The Stewart operation, with its outlined after treatment, is indeed a valuable contribution to orthopedic surgery.

Ethan H. Smith, M. D. (Flood Building, San Francisco)—The operations mentioned by Doctor Stewart for flexion deformities of the hip-joint such as Soutter's and Campbell's, and a modification by Doctor Stewart himself, have a very limited range of usefulness, in my opinion, if indicated at all.

From a study of the action of the hip-joint, it would seem that the muscles involved in the above-mentioned operations are in but a small measure to blame for the deformity. The muscles most involved are the psoas and iliacus with the combined tendon attached to the lesser trochanter, which is the direct flexor of the thigh. Almost invariably the adducter group is also greatly contracted in these cases. The tendons of the psoas and iliacus muscles are well-nigh inaccessible for extensive operation. Tenotomy of the adductors is a very simple and a very useful procedure in many cases where they are contractured.

The cutting transversely of the body of a muscle, and especially the muscles involved in the operations under discussion, is never warranted by any compensatory improvement in function. The transverse cutting of a muscle is well-nigh uncalled for in any surgical procedure. The psoas and iliacus muscles can nearly always be lengthened by traction. They are not prone to contracture.

To use a popular way of expression, the best method of cure is the prevention of deformity in the beginning of the trouble. This is quite possible if the cases are placed in the hands of surgeons trained in orthopedic work right at the beginning. I would ask that every influence be brought to bear on the medical profession as a whole, to pay more heed to turning these cases of deformity, and many others, over to the orthopedic surgeons just as soon as a diagnosis is made. Telling parents that "the child will outgrow the trouble," or wasting valuable time in useless and unskillful endeavor, brings the case to the orthopedic surgeon in a condition when perfect cure is impossible.

Doctor Stewart (closing)—I would like to take issue with Doctor Smith in two matters, first in regard to the responsibility of the psoas and iliacus in causing flexion deformity. I have never seen a case of contracture at the hip where these muscles were responsible, and I believe my memory is correct when I say that the late Doctor Robert W. Lovett told me he had never seen a case of flexion contracture in which operative measures were necessary on the ilio psoas group. When such a careful observer, and one who had such a large experience in the treatment of these conditions could say that, I doubt very much whether many cases are due to this group of muscles.

As to the responsibility of the adductors, I can only say that adductor contraction is rarely present in infantile paralysis, but is frequently responsible for a portion of the deformity in spastic paralysis and in arthritic conditions.

In the next place, I feel that Dr. Smith is rather radically conservative in advising traction for the removal of the severe deformities of the hip in infantile paralysis. If he were confining his remarks to arthritic conditions of the hip, I would heartily agree with him in the use of traction. In the paralytic contracture, however, I must disagree with him. For many years Soutter endeavored to treat these conditions by non-operative procedures, only to meet with disappointment, and it was these unfortunate experiences that finally compelled him to devise and practice the operation which bears his name. My endeavor has been limited to an attempt to add a refinement of conservatism to the pioneer work of Soutter.

I thoroughly agree with the plea for preventive orthopedics, especially in infantile paralysis.

RATIONAL CONDUCT OF LABOR

By HARRY S. FIST, M. D., Los Angeles

Physician must know what should be done and what left undone.
A plea for physiologic midwifery.
Much of present surgery in obstetrics unwarranted.
The physician's services should date from early pregnancy to complete involution of the uterus.
The lazy doctor should not do obstetrics.

DISCUSSION *by E. J. Krahulik, Los Angeles; John Vruwink, Los Angeles; Elizabeth Keys, San Francisco; G. Carl H. McPheeters, Fresno.*

THE modern physician has a regrettable tendency toward the use of complicated and involved methods for the accomplishment of plain and simple tasks. The obstetrician is no exception.

The older generation of obstetricians would tie the umbilical cord with a piece of sterile tape, and the result was satisfactory. The newer generation must needs have some sort of a special clamp or technique for performance of the same task. All manner of bizarre maneuvers are advocated and used to deliver the child, when a simple procedure assisting the mechanism of labor would effect delivery. It is a glaring fact that, in spite of all our efforts, the relative mortality rate for parturient women, as the result of sepsis, has not materially diminished in the last twenty-five years.

Something seems to be wrong with our work. Obstetric patients require care from the time of conception to the end of involution. Why do they not obtain it? Delivering the baby is by no means the whole story. The ultimate aim is to have a well mother and a well baby.

PRENATAL

A careful history and a complete examination, instructions as to diet, care of breasts, exercise, clothing, and coitus, are essential in every case. Examinations of urine and of blood pressure at frequent intervals are of the utmost importance.

Previous to the onset of labor, the pelvis and its contents should be studied carefully and the findings recorded. The shape and size of the pelvis should be known, and a pre-labor study made of the position, presentation, and size of the fetus, especially the head.

George Ernest Herman goes so far as to state in his book, "Difficult Labor," "Almost all difficult labors are the result of faulty diagnosis, not only of the position of the fetus, but also of disproportion between the size of the fetus and the size of the pelvis."

LABOR

If labor is to be attended efficiently, it is necessary to know the anatomy of the birth canal and to understand the share each structure has in the mechanism of labor. With this knowledge, the forces nature intended will be applied, instead of the present-day spectacular makeshifts. No matter how careful our aseptic precautions, we endanger the patient's life every time we invade the birth canal. Statistics show that 40 per cent of all fatal septic cases have had some sort of operative interference. How much better it would be if we could more often terminate labor without the performance of

version or the application of fearfully and wonderfully designed forceps, for mother and baby would then both be in less danger. The dangers of a breech presentation may often be avoided by external version prior to the onset of labor. Induction of labor, because of a borderline pelvis, may render a Caesarian section unnecessary.

FIRST STAGE

The uterine contractions are in the upper uterine segment. The lower uterine segment dilates as the upper contracts and retracts, pulling the lower against the presenting part, aided by the hydrostatic pressure of the bag of waters. The child cannot be expelled until the cervix is fully dilated. Clearly, then, the patient should not bear down during the first stage of labor, for the presenting part, surrounded by the lower segment, would be wedged into the pelvis, and dilatation thus retarded. The patient would tire herself out without making any progress. The supports of the uterus would be pulled down, laying the foundation for "falling of the womb," at a later date.

It is possible to know the condition of the cervix, and the progress of the presenting part, by means of rectal examinations at intervals. Until the cervix is fully dilated the patient should not bear down, and should rest between pains. She should have light, easily assimilable food at regular times, and sedatives if indicated.

SECOND STAGE

The second stage of labor is one of active work. The responsibility for this stage rests entirely with the doctor. The man who goes to bed and has the nurse call him when the head is being born is in a class with the midwife; for, if he has the knowledge, he is not at hand to apply it. Worse than the lazy man is the one who unnecessarily invades the birth canal, for he increases the danger of infection, and the patient would be much better off without him.

The bag of waters protects the child and helps dilate the cervix. When the cervix is fully dilated, if the membranes are not already ruptured, this should now be done, or progress is impeded.

In this stage the patient should assist every pain with voluntary efforts, and should receive instructions from the doctor so that she may know how best to do so. If she does not assist, contractions often become weak or die away entirely. If she is reassured and urged to further efforts, to simulate straining at stool, to work throughout the entire course of every pain, and to rest between pains, labor will proceed much better. When pains are tumultuous and labor too precipitate, the patient should refrain from bearing down, or be given a sufficient amount of anesthetic to retard the pains.

In order for delivery to take place, the fetal presenting part must flex, descend into the pelvic cavity, and flex further at the pelvic floor, when rotation and delivery follow.

If flexion does not take place, labor stops. This is, in most cases, due to the inability of the uterine and abdominal muscles to exert enough pressure. Therefore, some method for assisting these muscles to produce flexion of the presenting part seems the logical procedure. The tight abdominal binder, as used by Beck of Brooklyn, does the work very well. In its simplest form, this binder is a piece of strong cloth, pinned tightly around the abdomen with safety pins. It may be made as a front and a back piece, with buckles and straps on each side. With this support, the patient can exert more pressure, so that flexion takes place and labor proceeds, saving the mother and baby hours of stress and danger. In cases of pendulous abdomen, the effect of the binder is often magical.

"Puller-straps," are helpful. They should be short enough so the patient need not bend the elbows, but can pull straight from the shoulders.

During the second stage, the fetal heart should be carefully checked after every pain by means of the head stethescope. If slower than 100 per minute, faster than 160 per minute, irregular, or failing to return quickly to normal after each pain, it is a sign of too much compression of the child. The appearance of meconium with a vertex presentation also indicates danger. Upon the development of any of these signs, the binder should be removed and the patient asked to cease all voluntary efforts until the heart is normal, after which more caution is used as to the pressure applied.

A lacerated or relaxed perineum does not flex the head well so that rotation will follow, and has lost the funnel-shape which is so important in directing the occiput forward. It is, therefore, very often a great factor in delayed rotation. Steps should be taken to restore such a perineum to as nearly its normal function as possible. To accomplish this, the thighs should be flexed tightly on the abdomen during each pain, when the head is on the perineum. This tightens the perineum much as the same process would tighten the seat of a man's trousers. As a result, the head flexes, rotation takes place, and many a so-called persistent occiput posterior is avoided. Why, then, attempt forceps extraction or methods of rotation which involve invasion of the uterus, before trying this simple procedure? The mother and baby are entitled to all the safety we can give them.

When the head begins to come through the vulva, the patient should be given sufficient anesthesia to cause partial subsidence of pains; the thighs should be extended to relax the perineum, and a hand placed over the head, slowing its progress and directing it forward against the pubes.

As soon as the head is delivered, search should be made for coils of the cord about the neck. These may be brought up over the head, or slipped down over the shoulder. If neither can be done, two clamps may be applied and the cord cut between them.

The head should be depressed, so the anterior shoulder will slip out under the pubic bone. The head should then be elevated, and the posterior shoulder will pass out over the pelvic floor. Since the bulk is decreased by the anterior shoulder being out of the way, there is less chance of causing a laceration. The rest of the body easily follows.

Mention of the fact that the bowels and bladder should be empty, and that strict aseptic and antiseptic precautions should be observed, seems unnecessary; but the sad fact remains that many obstetricians disregard these important things. The feasibility of forceps extraction, version, or Caesa-

rian section, is always considered; but the necessary practical procedures which are at our command are dismissed without a thought.

THIRD STAGE

From the time the baby is born until the placenta is expelled, the assistant or nurse should keep one hand on the fundus and gently rub its surface if there is relaxation. There is no especial hurry about delivery of the placenta, so the baby may first be taken care of. It should be made to breathe properly, first milking out the trachea with the finger on the front of the neck, and then stimulating respiration by running the hand quickly up and down the spine. The baby should never be struck over the kidneys. It is well at this time for the doctor to cleanse the face and place the prophylactic in the eyes. The cord may be tied when it stops pulsating, and a sterile alcohol dressing and binder applied.

If, at the end of twenty minutes, signs of separation of the placenta are evident, the thumb may be placed in front of the uterus, the four fingers behind, and the two brought gently together to assist expulsion. Manual removal of the placenta should be regarded as a major operation. The cord should never be used for traction. The placenta should always be examined to see that it is complete.

At the end of the third stage, the cervix is usually low in the pelvis. The large veins brought with it are kinked and stretched, so the tendency is toward congestion and hemorrhage of the uterus. By means of one or both hands, applied above the pubes, the uterus can be brought up into the abdomen, lessening the danger of hemorrhage and increasing the chances of ultimate proper position of the uterus. At this time the patient may be given ergot or pituitrin, and the uterus should be watched for at least another hour.

Examination of the cervix and perineum may be made at once or after an interval of seven days, but, in every case, all lacerations should be repaired.

PUERPERIUM

The duties of the obstetrician are not ended when the uterus is emptied. The patient should be seen daily during the lying-in period. Careful attention must be paid to the diet, the breasts, the temperature, the bowels, the lochia, the uterus, and many other details. Properly directed exercise will do a great deal toward hastening good involution. The baby must have the same sort of care as to abnormalities, umbilicus, prepuce, tongue, bowels, weight, eyes, and numerous other things.

Every conscientious obstetrician will insist on making a thorough examination of mother and baby about a month after the delivery so that he may administer whatever treatment is necessary. If this is done, there is no excuse for leaving uncorrected a malposition of the uterus, or neglecting a badly bulging umbilicus.

SUMMARY

Prenatal care, including complete examination for every patient.

Proper preparation for labor.

Rest during first stage; hard work, and protect maternal structures during second; ample time during third.

When cervix fully dilated: rupture membranes; tight abdominal binder; properly adjusted pullers; flexion of thighs. Close check on condition of baby.

Replacement of uterus after expulsion of placenta.

Post-partum care, to include examination one month after delivery.

Westlake Professional Building.

DISCUSSION

E. J. Krahulik, M. D. (6422 Hollywood Boulevard, Los Angeles)—Dr. Fist's plea for physiological obstetrics, at a time when operative delivery is the fashion, should be commended. At present little attention is directed toward the first stage. Sad experience has taught us that attempts at delivery before the cervix is fully dilated are mutilating and often disastrous. The various interferences have, therefore, been postponed to the second stage.

One needs to remain with but a few women during their labor, and he will realize that the second stage is relatively comfortable. When the cervix is fully dilated, one can safely predict a termination within two hours. Three or four drops of chloroform properly administered with each pain will make the patient comfortable. I am familiar with a labor routine similar to the one described which is used by Polak at the Long Island College Hospital, Brooklyn. Forceps are rarely necessary, second stages usually terminate within two hours, and there is little anxiety about posterior positions. The head does not rotate until it reaches the levators, consequently there is little cause for alarm before the cervix is dilated. If at this time there is someone present to direct the patient's efforts, such misfortunes as deep transverse arrest and unrotated posteriors will be historical.

Does the obstetrician who performs a version or applies forceps unnecessarily blame himself for his invalids, as well as his deaths? Does the hour of labor that the patient has avoided sufficiently compensate for the possibility of years of discomfort from a chronic parametrial inflammation, and later for an operation when some hopeful gynecologist will sacrifice a cervix and perhaps a normal tube and ovary trying to cure this pain? When these conditions do occur and one has not done any operative procedures, "the peace of mind surpasseth all understanding."

Our conservative efforts should be directed to the first stage. It is most unmercifully neglected. Usually the patient is allowed to suffer alone in a room. Occasionally a nurse or the doctor stops long enough to tell the patient that "she must help herself," and instructs her to "bear down." How grateful a patient is when someone remains with her to comfort and encourage her. A noisy patient becomes calm and will rest between pains. Knitting or reading magazines are hardly outbursts of sympathy.

Analgesia during the first stage is still a glaring field for investigators. An analgesic must be fool-proof and must not carry any possibilities of complications. Where it is not contra-indicated because of the patient's general condition, gas will alleviate the suffering. It is practically harmless, but rather expensive. Morphine scopolamine may be used safely by trained obstetricians when there is an ample pelvis, but increases the incidence of forceps. The man who promiscuously promises a painless labor is dangerous.

Contracted pelves with a diagonal conjugate of 10 cm. or above should be given a test of labor; that is, a second stage of at least four hours managed as outlined by Dr. Fist. Should the head fail to engage, a two-flap low-incision Caesarian section could then be performed. In a series of cases where this plan was followed, borderline and flat pelves occurred about fifty-five times per thousand, but the incidence of Caesarians was only 0.8 per cent. Inducing borderline pelves would require many unnecessary inductions; some cases might not be induced in time, others would give very small babies.

John Vruwink, M. D. (Pacific Mutual Building, Los Angeles)—Two years in a mining camp in Arizona afforded me an opportunity to watch the immediate results in about five hundred labors. The patients were, for the most part, Mexicans. There was practically no prenatal care, the management of labor consisted, in general, in conducting the second stage. The outstanding fact in my mind was the high proportion of spontaneous labors, the

total absence of eclampsia, the absolute rarity of sepsis, and post-partum hemorrhage.

This was an interesting comparison to a series of cases followed at the Chicago Lying-in Hospital, where the conduct of labor was one of activity in the second stage, namely, prophylactic forceps.

The habitat and life of the woman in the open and her increased capacity for work and pain were no small factors, in the matter of comparison, to the artificialities surrounding the life of the patient in a large city.

The Los Angeles Maternity Service is now conducting more than 100 labors per month. Since its inception the slogan has been "Intelligent Watchful Expectancy." A maternal mortality of one death to 734 deliveries and an infant mortality of less than 5 per cent, including all stillbirths and deaths within ten days, is more than presumptive evidence that we should continue this course.

The end-result, as Dr. Fist emphatically states, is a well mother and a live and normal baby. Such a result is obtainable not merely by conservative management, but conservative management intelligently applied. We will always face the possibilities of hemorrhage, there is disproportion between passenger and passage, not always discernible before labor, and there is sepsis even in spontaneous labor, with no examination or interference. Occasionally, an eclampsia occurs, in spite of judicious management, because of our imperfect knowledge of its etiology.

I do not believe that the midwifery practiced in Arizona equals in results, particularly for the mothers, the end-results obtained in later observations. Neither do I believe that forceps—or version and extraction—may be indiscriminately applied, and that results can approximate the end-result of normal spontaneous labor, intelligently directed according to the principles of this paper. No one, however, who sees much consultation practice can hide the fact that conservative obstetrics ceases to be intelligent conservatism when factors are present or arise during the management of labor causing dystocia. A plea for conservative obstetrics is equally a plea for intelligent interference.

Dr. Fist is to be decidedly encouraged in his plea for rationalism, more attention to prenatal care; more thoughtfulness for the first stage of labor; more intelligent management of the second and third stages of labor; and watchfulness during the puerperium, both for mother and baby.

Elizabeth Keys, M. D. (391 Sutter Street, San Francisco)—Discussion of obstetrical subjects has so tended to the spectacular that the physiological phases of pregnancy and delivery must risk lack of savor. It seems a pity that with so many fundamental problems still untouched, time, labor, and interest should be spent on more or less dramatic detail.

Prenatal care means that at all stages of pregnancy the doctor has a clear picture in his mind of the mother, her baby and their reaction to each other. While safe-guarding the patient, this also greatly relieves the physician of the sickening terror of the unexpected, an experience that may visit the most careful in a fulminating toxemia or sudden violent hemorrhage.

Prenatal care means also attention to all the small details of the patient's life, common sense hygiene, explanation of discomforts, reassurance oft repeated, neighborly experience and advice modified or utilized, morale sustained—and *only on indication* does it mean radical departure from the patient's ordinary mode of life.

It is unnecessary to discuss further Dr. Fist's presentation of the mechanics of labor, but we cannot resist emphasizing his picture of the risks of the vaginal finger. To our mind the greatest (in fact, the only great) advance in childbed prophylaxis in many years is the development of rectal examination, yet some of our interns come to us completely unacquainted with this procedure, and many men who are doing only casual obstetrics will not take the pains to develop their judgment in this important item of diagnostic technique.

That bete noir of the obstetrician, the posterior position, is ever-occurring. With added years of observation, we find many suggestive symptoms in the labor when the case has not been clear on abdominal examination; both first and second stages are slow with varying pains, rectal examination shows persistence of the anterior cervical lip, which does not retract readily over the imperfectly flexed head, and descent is sluggish. Encourage those patients, perhaps give them a rest with morphine and chloral and bromide, and allow them time for nature's effort at rotation, which is usually less damaging than radical interference.

We are doubtful that any method of support at the outlet is really valuable. After delivering several hundreds of Japanese primiparae with but rarely a stitch, and hundreds of whites rarely without one, we feel convinced that it is a matter of tissue rather than technique; and this opinion takes into account the relative size of mother and baby.

During the third stage we insist on *gentle* manipulation of the uterus, no abuse in the name of Crede. Also when the placenta is lying in the posterior vagina (as evidenced by the fundus, discharge of the retroplacental blood and slackening cord) it can be lifted out by tension on the cord much more safely and humanely than by driving it out from above.

The delivery of our women is largely in the hands of the general practitioner and will remain so. Therefore, an important factor in the "Rational Conduct of Labor" is the technical training of our interns in all the pathology of the maternity service. Since they are sent out at the end of their intern year, authorized to practice a branch of medicine that has such a proportion of true emergencies there should be no reservations on the maternity service. A breech in the hospital, under the eye of a chief, is much better experience than a breech later without help. All the complications of delivery and the puerperium should, with the assistance of the chief or assistant, contribute directly to the technical skill of the young graduate, leaving the specialist to annex as private assistant the young man who plans to limit his work and perfect himself in it.

G. Carl H. McPheeters, M. D. (Mattei Building, Fresno, California)—After reading and re-reading Dr. Fist's very interesting paper, I wish to say that I am in complete accord with the methods which he uses. For years I have employed the thorough physical examination for women before pregnancy, early in pregnancy, and examination of the expectant mother before labor begins. I never employ vaginal examination during the last month of gestation, but rectal touch only.

Care of the breasts of the primipara will well repay the physician, as well as his patient. We advise gentle finger massage of the entire breast to increase the circulation of the glands during the entire pregnancy. We advise traction of the nipples and the use of 10 per cent glycerite of tannin once daily, to toughen the nipples during the last month before the birth.

I especially approve of Dr. Fist's practice of keeping the patient quiet and having her avoid voluntary effort during the first stage. Many patients exhaust themselves by useless straining and bearing down during the first stage, and inertia develops during the second stage at the very time when voluntary efforts are necessary for normal birth. We also discourage the patient from walking about the room during her first stage. For the very nervous patient we employ codein grains ½ hypo. during the first stage, using morphine grain ⅛ or ⅙ for the very frightened and hysterical patient.

It is my practice to continue post-partum care for six weeks, and to examine every mother and baby at the end of six weeks. The ancient knee-chest posture and the hard ring pessary still have their field of practical use in preventing and correcting post-partum retroversions.

We have to thank Dr. Fist for a very interesting and practical monograph.

Slandering a Medical Man—To have and to maintain a good reputation is a matter of very great and serious concern to a physician, and he ought to give thoughtful and careful attention to the best means of protecting it against those who wantonly or wickedly seek to detract from it. Doctors are a frequent subject of gossip, but when it tends to damage them they should remember that it is not always defamatory, and that, indeed, they often derive substantial benefit from it. Ordinary foolish gossip should be altogether ignored, even though it be irritating and unfair, since by dealing with it seriously as a slander, wide publicity may be given to it and people may be led to infer that it is founded on something substantial when, as a matter of fact, it is mere irresponsible chatter.—Medical Standard.